

ANNUAL REPORT TO US FOREST SERVICE
INSECT CONDITIONS FOR 1986

Looper Complex, fall canker worm, linden looper, Phigalia titea, and others.

Host: Hardwood, predominantly oak.

Present Condition: Found causing complete defoliation to 300 acres in Hampshire County (Short Mountain). The complex may be increasing since the highs of the early 80's.

Locust leaf miner, Odontota dorsalis - The insect has subsided in Southern West Virginia but is extremely heavy in the Central and Eastern sections of West Virginia.

Oak sawfly, Pristiphora sp. - This insect is thought to be capable of causing defoliation to red oaks over 5,200 acres of forest land in Randolph County. It is estimated that 2,710 acres were heavy and 2,560 were moderately defoliated. Mortality has occurred to the red oak and is heavy. The amount lost has not been measured. The insect appears to be increasing and is expected to cover additional acreage in 1987. Estimates have been made that the insect has been causing light to moderate defoliation to the red oaks over the past 12 years.

Only red oak Quercus borealis trees were affected and the problem may encompass the majority of Randolph County and parts of Upshur County.

An eriophyid mite, Setaptus strobacis was found to be causing damage to white pine in Christmas tree plantations in Pocahontas, Monroe, Fayette, Kanawha, Jackson and Wood Counties. The insect may have been common for many years, but in 1986 it reared its ugly head and caused damage to white pines.

Pine Spittlebugs have been common in Scotch Pine plantations but no large problems have been encountered.

Gypsy Moth - A suppression project in 1986 encompassed 83,410 acres which were treated with Dimilin. The cost of treatment was \$4.51, per acre. Excellent protection and egg mass reduction occurred.

A study was conducted in 1986 to measure the amount of mortality that took place after one year of defoliation by gypsy moth. In 1985, approximately 3,004 acres were heavily

defoliated and 1,134 acres (38%) of the defoliated area was cruised.

The results were: Total estimated timber damage in the 1,134 acre cruise area was \$83,492.00 or \$73.63, per acre. The ratio of estimated timber damage (\$73.63) to the 1985 cost of protecting the trees with an aerial application of Dimilin (\$4.13 per acre) was 18 to 1.

In 1986, 8,270 acres were defoliated by gypsy moth.

FOREST DISEASE CONDITIONS REPORT FOR 1986

Hardwood Diseases

Anthracnose of Hardwoods

Anthracnose disease incidence for most hardwood trees was light for most hardwoods during 1985. There was a slight increase in disease incidence to the white oak group. Moderate infection was observed on the white oaks. Overall disease incidence has remained relatively low the past 3 years.

Bacterial Canker of Oak

This disease results from a bacterial infection of the outer xylem, cambium and phloem of the host tree. Diseased trees develop a fluxing condition. There appeared to be an increase in disease incidence from 1985 to 1986.

Beech Bark Disease Complex *Nectria galligena* *Nectria coccinea* and *Cryptococcus fagisuga*.

Beech mortality continues to increase in the 70,000 acres of National forest land where the disease was initially reported. Heavy mortality has been observed in some areas.

Bull'seye Leaf Spot - *Cristulariella pyramidalis*

Bull'seye leaf spot incidence was moderate this year on maples and hardwoods. This marked a slight increase in disease incidence over that reported in 1985.

Dutch Elm Disease - *Ceratocystis ulmi*

Disease incidence throughout the state was high again this year. This is probably the single most important forest and shade tree problem in the state.

Elm Phloem Necrosis - Elm yellows MLO

Elms displaying the classical symptoms of elm phloem necrosis were spotted again during 1985 near Charleston, WV. Only a few diseased roadside trees were observed.

Fireblight

This bacterial disease was widespread and severe on apples, crabapples and other members of the Rosaceae.

Hypoxylon Canker - *Hypoxylon atropunctatum*

This fungal pathogen appears to becoming much more prevalent on dead and dying oak timber. This week pathogen has been observed on dead and dying timber throughout much of the state.

Oak Decline

Oak decline induced by drought and/or insect defoliation is becoming a more serious problem. Portions of the state have experienced drought conditions for 4 consecutive summers. The two-lined chestnut borer (*Agrilus bilineatus*) and the root rot fungus (*Armillaria mellea*) are associated with the dead and dying trees. Oak decline has been reported or observed throughout much of the state.

Conifer Diseases

Cytospora Canker - *Cytospora kunzei*

This disease is fairly common on Norway and blue spruce planted throughout the state. Disease incidence remains fairly constant from year to year. Older, more mature trees appear much more susceptible to disease than young trees.

Lophodermium Needlecast - Lophodermium pinastri

Although disease incidence in Christmas tree plantations remains light, there has been an increase in the number of plantations reporting needlecast disease problems. One 30 acre Christmas tree plantation in Preston County suffered moderate damage due to Lophodermium needlecast.

Meloderma needlecast - Meloderma desmazierri

This was the first year this needlecast disease of white pines was reported in West Virginia. It was found in white pine stands in Braxton and Pocahontas Counties.

Naemacyclus needlecast - Naemacyclus minor

Although this fungal pathogen is common in most Scotch pine plantings, it rarely caused enough damage to warrant control.

Rhizosphaera needlecast - Rhizosphaera kalkhoffi

Each year, we receive more specimens and reports of this disease in Colorado blue spruce and Norway spruce plantings. Just a few years ago, it was difficult to find this disease in any spruce plantings. Although disease incidence is increasing, we usually only observe light to moderate damage to a given stand of spruce.

Bifusella Needlecast - Bifusella linearis

This fungal pathogen was commonly observed in Mercer County. The pathogen was fruiting on the 2nd and 3rd year's needles of white pine trees in the understory.

PROJECTS

White Pine Blister Rust

Surveys were conducted on 26,338 acres of land. Suppression

work was completed on acres, with 9718 Ribes plants destroyed. The blister rust survey is conducted on eastern tier of counties along the Virginia border.

Oak Wilt Detection

Sixteen (16) high incidence oak wilt disease quadrangles in the Eastern Panhandle and 2 high incidence quadrangles in the Southwestern section of the statee were flown during the summer. There were 471 suspect trees spotted on the Eastern Panhandle quads and 343 suspect trees spotted in the 21 southern quads. Disease incidence fluctuates annually. There doesn't appear to be trends for an increase or decrease in disease incidence.

1986 PEST CONDITIONS REPORT WORK SHEET

PEST (COMMON NAME): Sawfly

(SPECIFIC NAME): *Pristiphora* sp.

HOST: Red Oak (*Quercus rubra*)

PRESENT CONDITION:

AREA (TOTAL ACRES): 5200 plus

LOCATION: Randolph County

SEVERITY (INCLUDE ACRES OF MODERATE AND HEAVY DEFOLIATION OR INFECTION; DEFINE CLASSES):

Heavy — 2710 acres

Moderate — 2590 acres

LOSSES (INCLUDE AREAS OF TREE MORTALITY; ALSO VOLUME AND/OR \$ ESTIMATES):

Mortality in Stands - unable to measure at present time

TREND: Increasing

PAST TO PRESENT: estimated that damage has occurred over past 12 years

FUTURE:

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, COST, RESULTS):

COMMENTS: The infestation was mapped over 5200 acres of forest land only the red oak was effected - Not sure of percent of red oak in these stands - May account for 20% in some areas and much higher, 50% in other areas. Conversation with forester in area indicates that problem exists in other areas of Randolph Co. (Piedmont, Helochea, Rich Mountain etc.)

PESTS TO BE INCLUDED IN THE 1986 CONDITIONS REPORT

DISEASES

Scleroterris canker
Beech Bark Disease
Diplodia Tip Blight
Oak Wilt
European Larch Canker
Spruce Cone Rust
Significant Weather related problems
Other significant foliage, stem and root diseases

INSECTS

Spruce budworm
Jack Pine Budworm
Gypsy Moth
Bruce Spanworm
Saratoga Spittlebug
Fall Cankerworm
Forest Tent Caterpillar
Saddled Prominent
Variable Oak Leaf Caterpillar
Red Pine Scale
Red Pine Adelgid

DECLINES

Birch
Maple
Spruce and Fir
Larch
Ash (Ash yellows)
Oak

Conifer Sawflies
Other significant defoliators or shoot insects

DEFOLIATION TO RED OAK IN WEST VIRGINIA
(RANDOLPH COUNTY)

by Alan R. Miller

During the late summer of 1986, an investigation was made into the cause of dead and dying red oaks in the Kingsville area of Randolph County. This investigation was prompted by requests from a landowner who reported that his prime or better growing red oaks (*Quercus rubra*) were dying.

On August 28, 1986, a stand ^{of Cove} ~~in a cove of~~ hardwoods ^{were} examined on Armand Riccotelli's land at Kingsville by Alan ~~R.~~ Miller, Clark Haynes and John Thayer, all of the West Virginia Department of Agriculture, Clay Smith (USFS), Carlo Riccotelli (Sawmill operator) and landowners Patsy and Armand Riccotelli.

The only trees that were found to be dying were red oak. The other species that were not affected included chestnut oak, cherry, hickory, and yellow poplar. The dead trees had leafed out and turned brown during the summer. The trees showed symptoms of 2-lined chestnut borer and the root rot fungus Armillaria mellea.

While in the area, it was noticed that only the red oaks were partially or completely defoliated by an unknown insect. A large ^{which was defoliated} ~~defoliated~~ red oak was cut and examined. Only the large mid-ribs of the leaves remained and the tree showed a growth reduction over the past several years. Examination of growth of other species of trees did not show a growth reduction. This led us to believe the red oak trees have experienced some defoliation for the past 12 years. The defoliation this year (1986), however, was very heavy on the red oaks.

It was decided that the area and surrounding areas should be observed from the airland~~s~~^{to delineate infestation.} On September 9, aerial flights revealed that approximately 5,200 acres of forest land in Randolph County had heavy to moderate defoliation to the red oaks.

From observations and specimens submitted earlier in the year, the insect thought to be responsible is a sawfly, Pristiphora sp. Conversations with Foresters in the area indicate the problem is extensive and occurs from Belington in Barbour County to Helvetia in Randolph County. The most extensive damage occurred to red oak in the Laurel Mountain area of Randolph and Barbour County.

On September 30, Jan Hacker and I examined the litter beneath the affected red oak trees in the Laurel Mountain area in search of pupal cases of the sawfly and any other insect material which may give an indication as to the cause of defoliation. Very little was found and the only option left is to examine the trees in 1987 and collect the larvae which are causing defoliation.

The area seems to be expanding and may be extensive in future years. The mortality associated with this defoliation seems to be heavy and may be an economic loss to timber.